

What is claimed is:

- 1 1. A metal oxide semiconductor (MOS) varactor device comprising:
2 a MOS varactor device having a source and a drain connected to each other,
3 and a back gate, electrically separate from the source and drain, and
4 connected to a circuit common mode point.
- 1 2. A varactor device according to claim 1, wherein the common mode point is
2 referenced to a circuit supply voltage.
- 1 3. A varactor device according to claim 1, wherein the device is part of a voltage
2 controlled oscillator (VCO).
- 1 4. A varactor device according to claim 1, wherein the device is part of an LC
2 tank circuit.
- 1 5. A varactor device according to claim 1, wherein the device is an nMOS device.
- 1 6. A varactor device according to claim 1, wherein the device is a pMOS device.
- 1 7. A voltage controlled oscillator (VCO) comprising:
2 a resonant tank circuit for creating a radio frequency (rf) output signal; and
3 a metal oxide semiconductor (MOS) varactor for controlling the resonant
4 frequency of the tank circuit, the varactor having a source and a drain
5 connected to each other, and a back gate, electrically separate from the
6 source and drain, and connected to a circuit common mode point.
- 1 8. A VCO according to claim 7, wherein the common mode point is referenced to
2 a circuit supply voltage.

- 1 9. A VCO according to claim 7, wherein the device is part of a voltage controlled
2 oscillator (VCO).
- 1 10. A VCO according to claim 7, wherein the device is part of an LC tank circuit.
- 1 11. A VCO according to claim 7, wherein the device is an nMOS device.
- 1 12. A VCO according to claim 7, wherein the device is a pMOS device.